

Issued March 28, 1914.

U. S. DEPARTMENT OF AGRICULTURE,

BUREAU OF SOILS—MILTON WHITNEY, Chief.

IN COOPERATION WITH THE STATE OF MISSISSIPPI, E. F. NOEL,
GOVERNOR; E. N. LOWE, DIRECTOR, GEOLOGICAL SURVEY.

SOIL SURVEY OF LAFAYETTE COUNTY,
MISSISSIPPI.

BY

A. L. GOODMAN, OF THE U. S. DEPARTMENT OF AGRICULTURE,
AND E. M. JONES, OF THE MISSISSIPPI
GEOLOGICAL SURVEY.

HUGH H. BENNETT, INSPECTOR, SOUTHERN DIVISION.

[Advance Sheets—Field Operations of the Bureau of Soils, 1912.]



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1914.

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LETTER OF TRANSMITTAL

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
Washington, D. C., August 15, 1913.

SIR: In continuance of the cooperative work in the State of Mississippi a soil survey was made during 1912 of Lafayette County. This area was selected for survey at a conference with the State officials cooperating with the bureau.

I have the honor to transmit herewith the manuscript and map covering this work and to recommend their publication as advance sheets of Field Operations of the Bureau of Soils for 1912, as authorized by law.

Respectfully,

MILTON WHITNEY,
Chief of Bureau.

Hon. D. F. HOUSTON,
Secretary of Agriculture.

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MAP.

Soil map, Lafayette County sheet, Mississippi.

SOIL SURVEY OF LAFAYETTE COUNTY, MISSISSIPPI.

By A. L. GOODMAN, of the U. S. Department of Agriculture, and E. M. JONES, of the Mississippi Geological Survey.

DESCRIPTION OF THE AREA.

Lafayette County is situated in the north-central part of the State of Mississippi and contains 664 square miles, or 424,960 acres. It is bounded on the north by Tate and Marshall Counties, on the east by Union and Pontotoc Counties, on the south by Calhoun and Yalobusha Counties, and on the west by Panola County. It is about 27 miles wide and is almost square in shape. The county was established February 9, 1836.

Lafayette County lies within the broad physiographic division known as the Gulf Coastal Plain and embraces four distinct topographic divisions: The hilly and eroded uplands which are badly washed and dissected by small streams, the level table lands resembling a plateau and known as Woodsons Ridge, the second-bottom or alluvial terraces formed when the

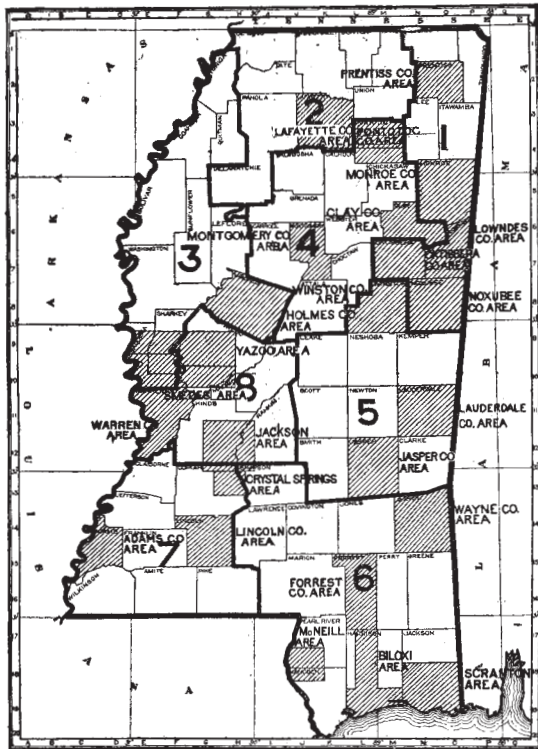


FIG. 1.—Sketch map showing areas surveyed in Mississippi.

streams were flowing at higher levels than at present, and the broad alluvial first bottoms subject to frequent overflow.

The surface features of the uplands are variable. The north-central section of the county, embracing about 10 square miles, is flat

to gently rolling. East of Oxford there is a belt of country approximately 14 miles in width and extending the entire length of the county which is made up of winding ridges with steep slopes and narrow intervening valleys. This section is badly dissected and gullied, giving an extremely broken profile. Some of the walls of the gullies formed by erosion are almost perpendicular. The country west of Oxford ranges from rolling to hilly, but is less rough and broken than that in the eastern section. Approaching the Tallahatchie River the descent from the second to the first bottom is very gradual. The alluvial flats on the small creeks and branches are quite wide in proportion to the size of the streams. In the northeast section of the county numerous gulches, with steep, V-shaped banks or almost perpendicular walls, ranging from 25 to 100 feet in depth are found. There are two exceptionally high hills in the county, locally known as Thackers and Summerville Mountains. The estimated elevation of Thackers Mountain is 600 feet above sea level. The county is crossed from east to west by both the Tallahatchie and Yocona Rivers. The Tallahatchie River forms the north county line for about 12 miles. It follows a southwest course through the county. The Yocona River enters the county from the east 4 miles north of the Calhoun County line and flows almost due west for about 25 miles, then turns to the south, leaving the county just east of the Panola County line.

The Tallahatchie River bottom, ranging from 1 to $2\frac{1}{2}$ miles in width, consists of rich alluvial soil. The Yacona River bottom averages about a mile in width. The drainage of the county is carried by these rivers and by numerous creeks, including the Puss Cuss, Potlockney, Burney Branch, Coon, Kettle, Cypress, Pumpkin, Wolf, Hurricane, Toby Tuby, Clear, Greasy, Blackwater, Graham Mill, Lees, and Yellow Leaf.

The first settlers of Lafayette County were mainly American born and came largely from the Carolinas. Since the county was first settled the population has increased steadily, and the greater number of the present inhabitants are direct descendants of the original settlers. The population of the county is given in the 1910 census as 21,883.

Oxford, the county seat, is the largest town in the county. It has a population of 2,014, according to the 1910 census, and is about 75 miles south of Memphis. Oxford is the principal local market for farm products. Abbeville, Taylor, Burgess, Lafayette Springs, Tula, Paris, Dallas, Harmontown, Blackwater, and College Hill are small, enterprising towns.

The Illinois Central Railroad crosses the county from north to south. This railroad affords good transportation facilities, giving the county connection with Jackson and Memphis.

The University of Mississippi is located at Oxford. Primary education is receiving increased attention, and the public and rural school system is being rapidly improved. A number of the small urban schools have recently been combined, public conveyances being provided for pupils living more than a mile from the school.

An agricultural high school, which will afford an opportunity to study advanced methods of scientific farming, is being established at College Hill.

The public roads throughout the county are in only fair condition. However, bonds have recently been issued for road building, and the roads are rapidly being improved.

CLIMATE.

No complete records of the climate of Lafayette County are available, the nearest Weather Bureau station at which temperature and precipitation data have been recorded being at Batesville, Panola County, Miss. This station is only 20 miles west of Lafayette County, and since the altitude and other conditions are practically similar the records of the Batesville station are doubtless representative of the local climatic conditions. The climate of Lafayette County is temperate and well suited to varied agriculture. It is quite similar to that of the entire northwest section of the State. The changes in temperature are gradual. The summers are long and hot, and the winters short and mild. Crops can be grown during 9 months, and cattle grazed on the pastures for 10 months of the year.

January and February are, as a rule, the two coldest months. Snowfalls and freezes occur during these months. The cold spells are of short duration.

The average date of the first killing frost in the fall is October 24, and of the last in the spring March 24. The earliest date of killing frost recorded in the fall is October 9, and the latest in spring is April 7.

The following table gives the normal monthly, seasonal, and annual temperature and precipitation recorded at the Weather Bureau Station at Batesville.

8060°—14—2

Normal monthly, seasonal, and annual temperature and precipitation at Batesville, Panola County, Miss.

Month.	Temperature.			Precipitation.			
	Mean.	Absolute maximum.	Absolute minimum.	Mean.	Total amount for the driest year.	Total amount for the wettest year.	Snow, average depth.
	°F.	°F.	°F.	Inches.	Inches.	Inches.	Inches.
December.....	44	75	1	4.4	3.9	3.1	0.5
January.....	44	76	-3	5.2	6.0	5.4	1.4
February.....	43	79	-5	4.4	0.5	5.0	0.7
Winter.....	44	.....	.....	14.0	10.4	13.5	2.6
March.....	53	83	17	5.9	4.2	2.0	0.6
April.....	62	93	29	4.0	3.3	7.4	0.0
May.....	70	96	36	3.9	1.7	13.5	0.0
Spring.....	62	.....	.....	13.8	9.2	22.9	0.6
June.....	78	103	40	4.4	3.6	7.7	0.0
July.....	80	107	53	4.6	6.6	2.3	0.0
August.....	79	105	49	3.3	0.5	3.0	0.0
Summer.....	79	.....	.....	12.3	10.7	13.0	0.0
September.....	72	97	34	2.6	1.0	8.3	0.0
October.....	61	92	18	1.7	1.7	0.3	0.0
November.....	51	81	16	3.6	3.6	5.3	0.0
Fall.....	61	.....	.....	7.9	6.3	13.9	0.0
Annual.....	61	107	-5	48.0	36.6	63.3	3.2

AGRICULTURE.

Lafayette County, with its 11 different soil types, is capable of producing a wide range of crops. Despite the large number of crops grown, however, only a few have an important place in the agriculture of the county. This is not due to the scarcity of land well suited to the production of other crops, but to indifference in crop selection and the practice of inefficient methods of agriculture, resulting from the present system of land tenure. Many once prosperous and productive plantations have shown a noticeable decline in crop yields because the land has been used continuously for a single crop.

The negro tenants have grown cotton continuously for many generations, and since they are unfamiliar with modern methods of farming and the use of improved machinery or the proper cultivation of other crops, they continue to look upon cotton as the only source of income.

Cotton and corn constitute the two most important crops of the county. Cotton has long been the chief money crop of the southern farmer. The soils of Lafayette County are admirably adapted to its

production. The crop gives excellent results on the Memphis silt loam of the uplands and the Lintonia and Vicksburg silt loams of the lowlands. In dry years it is more profitable to grow cotton on the first bottoms along the rivers and creeks. Owing to the natural productiveness of these lands, very little commercial fertilizer is needed.

A production of 12,214 bales of cotton from 35,309 acres is reported in the 1880 census. In 1890 the acreage had increased somewhat, but the yields were considerably lower than in 1880. In 1900, however, the acreage devoted to cotton had increased to 40,329 and the production to 17,209 bales. The figures for 1910 show a decline in both acreage and production, 13,795 bales having been produced from 38,254 acres. Some of the best varieties of cotton grown in Lafayette County are the Columbia, Triumph, Cook, Russell, Texas Storm-proof, King, and Mortgage Lifter. Care should be exercised in selecting a variety that is best suited to the soil of the individual farm.

The production of cotton in Lafayette County will never reach its highest development until some thorough scheme of crop rotation is practiced. The raising of more live stock would encourage diversified farming. Cotton does not exhaust the fertility of the soil when grown in rotation and properly fertilized. It should always follow some legume. Cotton followed by corn and cowpeas, followed by oats or vetch turned under, followed by cotton, may be suggested as a simple and effective rotation. Deep and thorough preparation of the soil is an important factor in cotton production. The land should be prepared early in the spring. If cotton follows a cover crop of oats or clover the land should not be plowed until the middle of February. If, however, the land has no cover crop it should be plowed in the late fall or early winter, bedded in the early spring, and before planting a harrow should be run over the beds. The rows should be 4 to 5½ feet apart, depending on the fertility of the land.

Care should be exercised in the selection of seed and fertilizers should be liberally applied. About two-thirds of the fertilizer used should be applied at the time of planting and the remainder about six or eight weeks later.

Corn may be considered second in importance among the crops grown in the county. A production of 492,614 bushels of corn from 35,809 acres is reported in the 1880 census. There was a slight reduction in both acreage and production during the next decade, followed by an increase to 746,780 bushels from 44,965 acres in 1900. In 1910 a production of 617,479 bushels from 43,226 acres is reported.

Although corn is a very important crop, the acreage devoted to it on the average farm is by far smaller than it should be, as compared with that given over to cotton. In the northern corn belt planting is mostly done with two-horse check-row planters. These

implements drop two rows at a time, and the hills are so spaced that they form rows in both directions, thus allowing cross-cultivation. In planting corn in this county the ridge and water-furrow methods are generally practiced. The water-furrow method is best suited to sandy loam soils having a sandy clay subsoil, but is not advisable on those having a stiff clay near the surface. It gives excellent results on the Ruston, Orangeburg, and other upland soils.

Where corn is grown on the upland soils of the county some form of fertilizer should be used to give the best results. Manurial substances in almost any form may be used with corn, but an abundance of humus is necessary for the production of a maximum crop.

Various corn clubs and railroads throughout the State are encouraging corn production, and the methods in use are being improved.

A small and decreasing acreage is devoted to oats. The census for 1880 reports a production of 36,375 bushels from 4,091 acres. The figures for 1890 show a marked decrease, the crop being grown on 1,984 acres, with a production of 18,009 bushels. In 1900 a production of 8,590 bushels from 1,002 acres is reported, and in 1910 a total area of only 534 acres is given, with a production of 3,698 bushels. Scarcely one-tenth of the oats used in Lafayette County are home grown, the prevailing idea being that this grain can be shipped into the county cheaper than it can be grown. Few farmers fully realize the value of this crop, not only as a feed for animals, but as a cover crop for winter.

Success in the production of oats depends largely on the attention given to the preparation of the seed bed. A month or six weeks before the oats are planted the land should be well pulverized. Only a poor yield can be expected where the land is roughly broken and where the humus is deficient. The soil should be broken to a depth of at least 6 inches and harrowed repeatedly. The land should contain enough organic matter to prevent excessive baking during the dry spells which are common during the fall. Oats do exceptionally well after velvet beans, soy beans, or cowpeas. An application of 300 to 500 pounds of cottonseed meal and acid phosphate, mixed in the proportion of two to one, will prove decidedly beneficial.

The oats should be sown in the fall. Fall-sown oats are sometimes injured by winter frosts, but as a rule they do better than if sown in the spring. The fall-sown crop is also valuable as a winter cover crop, preventing the washing and leaching of the soil and keeping the land in good condition for spring planting. Oats should be grown more extensively in Lafayette County.

Irish potatoes do well in this county, but are grown only for home consumption. Like most other tuber plants they thrive in soils having a loose, fine sandy loam or silt loam texture. The Ruston fine sandy loam and the Memphis silt loam are the types best adapted

to potatoes. Yields of 75 to 200 bushels an acre are obtained throughout the county.

Sweet potatoes seem to do better on the sandy loams than on soils of lighter or heavier texture, good yields being secured on both the Ruston and Orangeburg sandy loam types. A larger acreage is devoted to sweet potatoes than to Irish potatoes, but only a small quantity is shipped out of the county. The commercial production of both Irish and sweet potatoes should prove profitable.

There are many excellent orchards of peaches, pears, and apples in the county, but the fruit industry has not attained its highest development. The sandy loam and fine sandy loam of the Ruston series and the Orangeburg sandy loam are particularly adapted to fruit. The Memphis silt loam found along Woodsons Ridge is also an excellent fruit soil.

Some of the best varieties of peaches grown in the county are the Elberta, Greensboro, Early Belle, Fayette, Thornton September, and Governor Hogg. The Early Harvest, Georgia Beauty, Red June, Iron Clad, Winesap, and Horse are the favorite varieties of apples. The Belle, Jewel, Kieffer, Duchess, and Dixie are the most popular varieties of pears.

The various soils of Lafayette County are capable of producing a wide range of vegetables. The sands, fine sandy loams, and silt loams are adapted to cabbage, eggplant, okra, tomatoes, squash, cucumbers, radishes, lettuce, onions, peas, turnips, and mustard. Lafayette County affords excellent opportunities for the development of a more extensive trucking industry.

Many of the soils of Lafayette County are particularly suited to sorghum. This crop is grown successfully on the Memphis silt loam of the upland and on the first and second bottoms of the rivers and creeks. The crop is also grown in small patches on moist creek bottoms and in the upland depressions. Sorghum is not only valuable for the production of table sirup, but furnishes good forage for cattle and hogs. The sorghum grown at present is almost exclusively for home consumption, very little if any of the sirup being shipped to outside markets. Heavy applications of fertilizers are necessary for the best results with this crop.

The well-drained sandy loams and fine sandy loams of Lafayette County are excellent soils for the production of watermelons and cantaloupes. Most of the melons grown are of the Lem Green variety. The Florida Favorite and Georgia Rattlesnake varieties are also popular. The greater part of the melon crop is grown on the sandy soils east and north of Oxford. Excellent crops are grown on areas of Ruston sand. Acreage applications of 5 to 10 tons of barnyard manure mixed with 200 pounds of cottonseed meal give good results with this crop. Some of the largest and best melons

grown in the county are produced on fields which have previously been planted to cowpeas.

Farmers are beginning to recognize the importance of cowpeas as a leguminous crop. This plant completes its development in about three months, and owing to the short season required it may be grown as a manurial crop at times when the land would otherwise be unoccupied. At present it is being most widely used for planting between the rows of corn, to be turned under after the corn is gathered. Cowpeas give excellent results when sown either broadcast or in rows, and constitute an excellent forage crop.

The velvet bean is another rank-growing leguminous crop which is valuable as a soil improver and forage crop. It will flourish on any well-drained soil and does well even on the lightest sands if properly fertilized. This legume is not extensively grown in the county, but the experiments of a few of the more progressive farmers indicate that it may be produced successfully.

Lespedeza grows wild throughout the county. It does best on the Vicksburg silt loam and on the slopes underlain by strata of white lignitic clay. This crop makes excellent pasturage for hogs, cattle, and horses.

The soy bean possesses many advantages over the other legumes commonly grown. It grows erect without runners and therefore does not tangle, and will stand bad weather after shocking without being injured. It produces large quantities of beans which, when thrashed, are very valuable for feeding purposes. The crop may be planted between rows of corn after the last cultivation with good results. This legume is especially suited to the cotton belt, and does well on a wide range of soils. It should be more extensively grown in Lafayette County.

A large number of wild grasses afford excellent grazing throughout the county. The water grasses which thrive on the low, marshy areas generally mapped as Meadow make excellent pasture and produce hay of good quality if cut before the stems become woody.

Broom sedge does well on practically all of the upland soils. It is sometimes cut for hay when it reaches the height of 12 to 20 inches. Bermuda is also a valuable grass suited to the county. It is not only a good pasture grass, but makes excellent hay when cut. It is used throughout the county as a soil binder, being planted on slopes to prevent erosion. Most of the gullied areas should be sodded with this grass. Carpet grass thrives on all of the bottom-land soils and is valuable for grazing. Johnson grass is just gaining a foothold in the county. It makes excellent hay, but is considered a nuisance in cotton and corn fields.

In general such winter-cover crops as oats, rye, clover, and vetch are not extensively produced. Greater attention should be given

to the growing of these crops, largely as a protection for the soil, which, owing to the hilly topography in many sections, easily erodes and becomes gullied where left bare and exposed to winter rains.

The need of more intensive cultivation and the systematic rotation of crops has manifested itself in Lafayette County for many years, but up to the present time little progress has been made along these lines. Cotton is allowed to follow cotton for several years or until the production is so reduced as to make the crop unprofitable. The ease with which this crop is grown, and the demand for both lint and seed at prices high enough to insure a good income, have naturally given cotton the most important place among the crops of the area. The danger of injury to the cotton crop by the boll weevil has recently encouraged more diversified farming, and as a result, more corn is now planted than ever before in the history of the county.

One crop should not succeed itself year after year if the best results are to be obtained. One of the main objections to the planting of clean-cultivated crops is that the humus and vegetable matter in the soil are soon exhausted, and the land deteriorates in productiveness unless the organic-matter content is maintained by the incorporation of some leguminous crop or by heavy applications of stable manure or other organic fertilizers. Cowpeas, velvet beans, soy beans, bur clover, and vetch should be included in the rotation with cotton, corn, oats, vegetables, and melons, in order to supply this deficiency. The incorporation of such decayed vegetable matter with the soil largely eliminates the necessity for the use of nitrogen in the commercial fertilizers. Better results are obtained from the use of such fertilizers where the soil is supplied with vegetable matter.

Up to the present time commercial fertilizers have not been used to any great extent, but with the tendency toward intensive farming their use is increasing. Complete fertilizers are popular, the leading brands being 8-3-2, 6-2-2, and 6-4-2 mixtures. For cotton, corn, or oats applications of 200 to 500 pounds to the acre are considered sufficient. In truck farming heavier applications, from 800 to 1,000 pounds to the acre, are frequently made. Side applications of nitrate of soda at the rate of 100 to 250 pounds per acre are frequently used for cotton or corn. It is applied at the time the first cotton blooms appear or when the corn begins to tassel.

According to the 1910 census the area in farms was 347,785 acres. Of this 133,090 acres was classed as improved. A comparison with the returns of earlier censuses shows a marked increase in both the total and improved area in farms. The value of all farm property in Lafayette County is given in 1910 as \$4,898,964 as compared with \$2,801,339, reported in 1900.

SOILS.

Lafayette County lies in three soil provinces: The Glacial and Loessial Province, the Coastal Plain Province, and the River Flood Plains Province. The principal geological formation is a brown loam or loess, which covers practically all of the western half of the county and large areas in the central and eastern parts. This material mantles the surface, having a depth of 6 to 15 feet along the western border of the county, and gradually thinning toward the east, finally giving place to a considerable extent to the underlying or basal formations of the Coastal Plain.

In many places the loessial deposits have been so removed by erosion as to leave these beds of clay, sand, and gravel exposed at the surface.

The loessial material, which is probably a wind-blown deposit, has weathered to a brown or yellowish loam or silt loam, showing great uniformity throughout in color and texture, but varying widely in surface configuration. Much of the land is rough and broken, consisting of winding ridges, with narrow crests and steep slopes and narrow intervening valleys, so that cultivation is impracticable. The weathering of this loessial material gives rise to the largest and most important soil type in the county, the Memphis silt loam.

The Coastal Plain material, consisting of unconsolidated beds of sands, clays, heavy clay, and gravel, has been exposed in the eastern part of the county. The weathering of this material has given rise to the Orangeburg, Ruston, and Susquehanna series. The Orangeburg series is characterized by gray to brown surface soils, underlain by red, friable, sandy clay subsoils. The series is represented in Lafayette County by the Orangeburg sandy loam and Orangeburg sand. The Ruston series has gray to grayish-brown surface soils, underlain by yellowish-red or reddish-yellow, friable, sandy clay subsoils. Small areas of Ruston sand, Ruston sandy loam, and Ruston fine sandy loam were recognized in the county. The silt loam is the only member of the Susquehanna series in the county. It is derived from the older and more compact clays of the Coastal Plain deposits. It is characterized by the tough, plastic, mottled clay subsoil.

There has been developed along the rivers and a few of the large streams a series of second bottoms, or high terraces, built up of old alluvium deposited when the streams flowed at much higher levels than at present. The weathering of this material gives rise to one important type, the Lintonia silt loam.

Large, continuous areas of recent alluvium occur along the Tallahatchie and Yocona Rivers and practically all of the creeks and smaller streams. These areas are constantly receiving additional

deposits from the streams at times of overflow and also colluvial wash from the adjoining uplands. This material has given rise to the Vicksburg silt loam, the largest and most important type of the first bottoms. There are also small areas of Thompson fine sandy loam and Meadow in these overflowed bottoms.

There is thus considerable variety in the soils of the county, which may be grouped on the basis of the organic material and process of erosion into four well-defined soils: (1) Old sedimentary upland soils; (2) wind-blown or loessial upland soils; (3) recent stream alluvium or frequently overflowed first-bottom soils; (4) old stream alluvium, or second-bottom soils lying above normal overflow. Within these broad divisions the soils have been further separated into series and types, the latter distinction being based solely on texture.

The following table gives the names and extent of the several types. Their distribution in the county is shown by means of colors and symbols on the accompanying map.

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Memphis silt loam.....	238,848	57.2	Ruston sandy loam.....	3,392	0.8
Smooth phase.....	4,096		Ruston sand.....	2,112	.5
Vicksburg silt loam.....	85,120	20.0	Thompson fine sandy loam...	2,112	.5
Susquehanna silt loam.....	40,256	9.5	Orangeburg sandy loam.....	960	.2
Ruston fine sandy loam.....	23,872	5.6	Orangeburg sand.....	512	.1
Lintonia silt loam.....	13,952	3.3	Total.....	424,960	.....
Meadow.....	9,728	2.3			

MEMPHIS SILT LOAM.

The surface soil of the Memphis silt loam to a depth of about 8 inches is a yellowish-brown to buff-colored friable silt loam having great uniformity of color and texture. The subsoil consists of a light-brown to reddish-yellow moderately friable silt loam, which quickly passes into a silty clay loam more compact than the surface soil and containing a much higher percentage of clay. Occasionally the lower part of the 3-foot section is lighter in color, showing slight mottlings of gray, and the material is a compact silt loam.

In general the type is well drained, owing largely to its elevation and uneven topography. Occasional areas are not so well drained, and in such places the surface soil has a much lighter color than the well-drained soil. In many cases this poorly drained soil is underlain at a depth of 20 inches by a very compact stratum of impervious material, usually consisting of a plastic, silty clay of brownish-yellow to reddish-yellow color, mottled with gray, yellow, and brown.

The Memphis silt loam is by far the most extensive type found in Lafayette County, covering 57.2 per cent of the total area.

The surface of the Memphis silt loam east and northeast of Oxford is badly broken. It includes a series of ridges and cross-ridges which are sharp crested, steeply sloping, and winding. The slopes are often badly dissected by gullies. This irregular topography precludes farming over the greater part of the type. The topography of the type west of Oxford is not nearly so rough as that on the east. However, owing to the great number of gullies and ravines, very few comparatively level areas are found.

The Memphis silt loam is derived from the weathering of a yellow or buff-colored formation known as loess. The thickness of this formation is variable. Along the Panola County line on the west the type ranges from 6 to 15 feet in thickness. The depth gradually decreases toward the east, until along the east county line the type gives way to the Susquehanna silt loam of the flatwoods region.

One of the most important problems to be dealt with in connection with the cultivation of the Memphis silt loam is erosion. Owing to the soft, noncohesive character of this material, including both soil and subsoil, and also to the elevated position and steepness of slope of a large part of the type, and because of the universal tendency to produce such crops as cotton and corn, great difficulty has been experienced in the prevention of erosion.

One of the peculiarities of this type is that if washing is not stopped before gullies become definitely formed, these will continue to increase in size until the surface of the whole field is practically ruined, being transformed into a mere series of gullies, with narrow intervening strips and ridges. As soon as a gully starts in a field it should be filled with brush and covered with dirt and stones. Much of the erosion that is now taking place on the hill slopes could be remedied by the planting of Bermuda and other grasses. Hill-sides not in cultivation should be kept forested. The blackjack oak that covers a large part of this type is of very little value for timber, but has a tendency to check erosion and prevent the formation of deep gulches. Where erosion has taken place the underlying sands and clays of other various Coastal Plain formations are exposed in all parts of the county.

The Memphis silt loam has marked power to retain moisture, and where properly cultivated it can usually be made to conserve enough moisture from the rainy season to supply crops during the occasional droughts that are likely to occur during the summer months.

Where deep cultivation is practiced and where there is a comparatively large amount of organic matter present the soil more readily absorbs and retains moisture than where these conditions are reversed.

Shallow cultivation, however, seems to be the general practice throughout the county, and in this case the soil packs to an appreciable degree and puddles during the heavy rains. The water runs off quickly. The land should first be plowed broadcast and then the soil "bedded up," instead of merely plowing out the previous rows and bedding up the water furrows.

The Memphis silt loam is susceptible of permanent improvement, enabling it to produce large crops. On the other hand, if it is not properly handled it quickly deteriorates into the condition of so-called "worn-out" or "run-down" lands.

Commercial fertilizer high in nitrogen is, in nearly all instances, beneficial to this type. Barnyard manure also produces notable increases in yields.

The Memphis silt loam is a good general farming soil, being especially adapted to cotton, corn, cowpeas, sorghum, vetch, bur clover, Bermuda grass, and lespedeza, and to all of the truck or market-garden crops grown in this section of the State.

Cotton produces from one-fourth to one bale and corn from 12 to 50 bushels to the acre. The yields in each instance depend on the amount of fertilizer or barnyard manure used and the method of cultivation practiced. Cowpeas do well and are grown to a small extent. Sorghum is grown for home consumption. The practice of growing cowpeas between the corn rows, allowing the vine to run upon the stalk, and then plowing them under after the corn crop is gathered in the fall, results in marked increase in the crop which immediately follows the corn. Other excellent nitrogen-gathering crops that would materially improve this type are the soy bean, vetch, and bur clover. The soy bean is just gaining a foothold in the county and promises to become popular. Excellent crops of cabbage, sweet potatoes, Irish potatoes, onions, lettuce, radishes, okra, beans, and pumpkins are produced. Cattle raising can be profitably carried on.

Where the soil is exposed to heavy winter rains and freezes, it loses a large part of its humus content through leaching. To avoid this, oats or rye should be sown as winter cover crops. Fall oats are now grown to only a small extent. Although most of the slopes are too steep for safe cultivation, they are well suited to grass for pasturage. When properly seeded to Bermuda grass, white clover, bur clover, and lespedeza, green pasturage could be maintained throughout the greater part of the year. Most of the cultivated land lies along the crests of the ridges, along the foot of the slopes, or on the more gently rolling areas.

The original forest growth on this type consisted of a mixture of shortleaf pine, post, red, blackjack, and white oak, gum, beech, syc-

more, and maple. Practically all of the merchantable timber has been removed.

The average price of farm land on this type ranges from \$5 to \$30 an acre, with an average value of \$8 to \$10.

Memphis silt loam, smooth phase.—This phase is very closely related to the Memphis silt loam, having almost identically the same physical characteristics but differing in topographic features.

The surface soil of the Memphis silt loam, smooth phase, to a depth of 5 to 10 inches is a brown to light-brown or yellowish-brown, mellow silt loam. The subsoil is a buff or reddish-yellow to yellowish-brown silty clay loam. Although compact, it is moderately crumbly when dry and slightly plastic when wet. This material usually continues to a depth of 3 feet, but occasionally in the lower part of the 3-foot section the yellowish-brown silty clay loam shows mottlings of gray and the silt content increases, giving a more friable structure. Where aeration and erosion have been active, the subsoil is a light-chocolate to reddish-brown color. On the lower slopes the soil is frequently 12 to 15 inches deep, and consists of a brown mellow silt loam, which is underlain by a brown to reddish-brown silty clay.

The Memphis silt loam, smooth phase, is confined to the upland section of the county, and is surrounded by the Memphis silt loam. Its topography ranges from nearly level to undulating. In a few places the surface is gently rolling. The surface of most of the phase is favorable for cultivation. The drainage is generally good, though some of the small depressions could be improved by tiling.

Very nearly all of the Memphis silt loam, smooth phase, is located in the north-central part of the county, along Woodsons Ridge. A few small areas occur in other parts of the county, the largest being in the vicinity of Bishop Store.

Owing to the comparatively level topographic features of this phase, it has not suffered extensive erosion. One of the peculiarities of this soil is that it erodes in deep gulches, the subsoil apparently being less resistant to erosion than the surface soil. On the Shinault place northeast of Oxford there are a number of ravines or gulches ranging from 30 to 90 feet in depth.

The agricultural value of this phase, owing to its topography and ease of cultivation, is much higher than that of the main type, the Memphis silt loam.

At present a large part of the phase is planted to cotton, producing from one-half to 1 bale to the acre. Corn produces from 15 to 25 bushels per acre. Where commercial fertilizers have been used in fairly large applications, yields of 50 to 75 bushels of corn are sometimes obtained.

Farther south in the State this soil is used exclusively for the growing of truck. Good yields of cabbage, tomatoes, okra, onions, peas, beans, squash, lettuce, and asparagus are obtained. With proper attention the same profitable results can be had in Lafayette County.

Much of the soil has deteriorated on account of improper cultivation. On areas where the soil is very shallow it is essential to plow deep in the fall, thus allowing the rains and freezes to disintegrate the soil material. In the spring, when the crop is to be planted, shallow plowing is preferable.

This soil is well adapted to Bermuda grass, bur clover, vetch, white clover, and cowpeas, and the more rolling areas should be devoted to these crops. It is also well suited to sorghum, which produces a good grade of sirup.

The Memphis silt loam, smooth phase, is considered one of the best oat soils in the county. This crop is profitable and also makes an excellent crop to prevent the leaching and washing of the soil by the heavy winter rains. Fall-sown oats produce from 20 to 35 bushels to the acre. Fruits of all kinds do well. Where this soil is to be used for truck farming, a mixture of acid phosphate and cottonseed meal, in equal amounts, applied at the rate of 500 to 1,000 pounds per acre, will give excellent results. One of the most important factors in the cultivation of this soil is crop rotation. The same crop should never be planted even for two years in succession.

Very little forest growth is found on this type, most of it being in cultivation.

The price of the Memphis silt loam, smooth phase, ranges from \$15 to \$50 an acre, according to its location.

LINTONIA SILT LOAM.

The surface soil of the Lintonia silt loam consists of a light-brown or yellowish-brown mellow silt loam, 8 to 10 inches deep. The subsoil is a brownish-yellow silt loam to about 20 inches, at which depth it grades into a yellow silty clay mottled with brown and white.

A few small spots of Calhoun silt loam occurring to the southeast of Graham Lake are included with this type, being too inextensive to be mapped separately. In these places the soil is a light-gray to whitish silt loam, underlain by a light-gray mottled with yellow or by a yellowish plastic silty clay. Iron concretions are scattered over the surface and throughout the subsoil. In places at a depth of about 15 inches a hardpan layer of silty clay sufficiently compact to retard drainage is encountered. The soil is acid and supports only a scant growth of vegetation.

The Lintonia silt loam is a second-terrace soil. It borders the overflowed bottoms of the Tallahatchie and Yocona Rivers, and also occurs along the Toby Tuby, Splinter, Clear, Cypress, and other creeks.

The type has an almost level surface, sloping very gently toward the stream which it borders. It is fairly well drained, owing to the fact that the slope is usually sufficient to provide good surface drainage, though in some of the level areas and depressions drainage should be assisted by artificial means.

The Lintonia silt loam consists largely of alluvial material. In places along the outer margin it has been modified by material washed down from adjacent slopes of Memphis silt loam, and thus is in part colluvial.

Practically all of this type is cleared and in cultivation. It is naturally productive and is easily tilled, and is considered one of the best soils in the county. It is not subject to overflow, and for this reason it brings a slightly higher price than the lower lying bottom soils. The prices range from \$15 to \$50 an acre.

Cotton and corn are the main crops. Cotton produces from one-half bale to 1½ bales, and corn from 20 to 35 bushels per acre. With proper cultivation these yields can be considerably increased.

Although very little of the type has been used for truck farming, it is one of the best truck soils in the county.

VICKSBURG SILT LOAM.

The surface soil of the Vicksburg silt loam consists of 8 to 10 inches of grayish-brown to brown mellow silt loam. The subsoil to 20 inches is a light-brown to brownish-yellow heavy silt loam, grading below into a yellowish-brown silty clay slightly mottled with gray and brown.

This type includes a few small spots where the surface soil is a light-gray to white silt loam and the subsoil a yellowish plastic silty clay or light-gray silty clay mottled with yellow. At a depth of about 15 inches a white silty clay hardpan is encountered. This layer is so impervious as to retard percolation and capillarity. If these spots were sufficiently extensive to be mapped separately, they would be classified as Lintonia silt loam.

The topography of the Vicksburg silt loam is smooth and level. The type borders nearly all of the streams in the county and is subject to frequent overflows. It is considered the most fertile soil in the county. The overflows keep the soil well covered with a coating of silt and finely divided vegetable matter. As a rule the natural drainage of this type is good, considering its level topography and low position. It could be very much improved, however, by

cleaning out and straightening the stream channels. Either tile drains or open ditches may be used to further improve the conditions.

Some of the largest areas of the Vicksburg silt loam occur in the first bottoms of the Tallahatchie and Yocona Rivers, where the soil is encountered in broad, continuous bodies, and in the first bottoms of the Puss Cuss, Cypress, Splinter, Toby Tuby, Clear, Greasy, Pot-lockney, and other creeks.

Owing to the loose, silty nature of the type it is easily cultivated. It is not an early soil, owing to the flood water it receives during the early spring rains. It is considered one of the best cotton and corn soils in the county; but if the boll weevil ever becomes active, the planting of cotton will have to be discontinued on this type, owing to the lateness of the crop.

During dry seasons, when overflows do not interfere with the growing crops, the Vicksburg silt loam will produce from 1 bale to 1½ bales of cotton and from 20 to 45 bushels of corn per acre.

In some of the poorly drained areas the soil was found to be slightly acid, but this can be remedied by the application of lime at the rate of 1,000 to 2,000 pounds per acre.

The natural forest growth consists of hardwoods, such as white oak, water oak, hickory, etc. The Vicksburg silt loam is valued at \$15 to \$40 an acre, depending upon its location and the degree of protection from overflows.

The following table gives the results of mechanical analyses of samples of the soil and subsoil of this type:

Mechanical analyses of Vicksburg silt loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
422607.....	Soil.....	0.1	1.0	1.0	2.5	6.5	67.8	21.2
422608.....	Subsoil.....	.0	1.3	1.5	4.0	7.6	61.3	24.4

RUSTON FINE SANDY LOAM.

The surface soil of the Ruston fine sandy loam consists of a grayish fine sandy loam or loamy fine sand, grading at about 5 to 8 inches into a reddish-yellow to reddish-brown fine sandy loam. The subsoil, beginning at about 10 to 15 inches, is a reddish-yellow to yellowish-brown, friable sandy clay. The lower part of the 3-foot section consists of a brownish, slightly plastic sandy clay.

This type is the most extensive upland sandy soil in the county. It occurs, however, only in small areas varying in size from 10 to 640 acres. Some of the largest areas are in the eastern and southeastern part of the county, near Paris and Crains Store.

As a rule the topography is very rough and broken, being dissected by numerous small streams and gullies. Most of the high, narrow ridges east of Oxford are occupied by the Ruston fine sandy loam. The soil possesses excellent natural surface drainage.

Where this type is cultivated the terracing of hillsides is quite essential, to prevent gullying, which is likely to occur on loose, fine sandy soils of this nature where the topography is rolling to steep.

The Ruston fine sandy loam is derived from the weathering of Coastal Plain material consisting of unconsolidated beds of sands and clays. It occupies an intermediate position between the Norfolk and Orangeburg soils.

As a rule this soil is decidedly deficient in vegetable matter and humus, and to secure the best results leguminous crops, such as cowpeas, velvet beans, soy beans, and peanuts, should be planted and turned under to supply the deficiency. The use of commercial fertilizers is necessary to obtain profitable yields. Barnyard manure also gives excellent results, but the supply is entirely inadequate. Rotation of crops should be practiced, and, if possible, winter cover crops such as oats, rye, vetch, and cowpeas should be planted every fall to protect the fields. Deep fall plowing and shallow cultivation in the spring are recommended. Cotton, corn, sorghum, sweet potatoes, Irish potatoes, peanuts, and soy beans do well on this type. It is also adapted to fruit.

The Ruston fine sandy loam has a value of \$5 to \$12 an acre.

RUSTON SANDY LOAM.

The surface soil of the Ruston sandy loam consists of a gray to grayish-brown medium sandy loam, which grades into a yellow or reddish-yellow sandy loam at about 5 to 8 inches. The subsoil, beginning at 10 to 15 inches, is a yellowish-red to reddish-brown friable sandy clay, which becomes heavier with depth. The soil as a rule is deficient in organic matter, except in small depressions where an abundant moisture supply has favored a more luxuriant growth of vegetation. In many places the sandy clay subsoil has been exposed by erosion. Small spots of coarse sandy loam or loamy coarse sand are included in the type.

The Ruston sandy loam is not as extensive in Lafayette County as the Ruston fine sandy loam, and occurs only in small, scattered areas.

The topography is hilly, the type often occupying the crests of high, narrow ridges. Owing to the uneven surface and the loose texture of the soil, this type possesses excellent natural surface drainage. The soil is deficient in organic matter. This can be supplied by adding barnyard manure or turning under leguminous crops.

Where legumes are to be turned under, the type should be planted with a crop that produces a large amount of vegetable matter, such as cowpeas, velvet beans, or soy beans. After the crop has reached its full growth, it should be plowed under and allowed to decay. The following spring the land should be well broken and planted to corn with cowpeas between the rows, the mass of vegetation remaining after the corn is gathered, consisting of stalks and vines, to be plowed under. In this way the soil may be provided with humus in sufficient amounts for profitable crop production.

The growing of winter cover crops on this type should receive greater attention. Such crops are needed to protect the soil from erosion. The type is well adapted to fruits, watermelons, peanuts, cowpeas, soy beans, velvet beans, and potatoes.

The Ruston sandy loam has a low agricultural value. It sells for \$3 to \$8 an acre.

RUSTON SAND.

The Ruston sand, to a depth of 6 to 8 inches, is a gray to grayish-brown, incoherent medium sand. The subsoil consists of a reddish-yellow medium sand. Usually in the lower part of the 3-foot section the sand is somewhat coarser in texture.

The type is encountered along slopes leading to drainageways and on the crests of ridges, but is not extensively developed. Some of the largest typical areas in the county occur along the Altus road east of Oxford and along Burney Branch.

Very little of the Ruston sand is cultivated, most of the type being covered with scrubby oak and hickory. It is not considered a strong soil, on account of its loose, incoherent structure and leachy nature. Most crops planted on this type wilt and burn badly when exposed to the hot summer sun in dry seasons. With the incorporation of liberal quantities of vegetable matter in the form of barnyard manure or green manuring crops, this can be made a fairly good agricultural soil for early crops and light farming. Applications of commercial fertilizers are necessary for the production of profitable yields. It is a good soil for the growing of melons. The Ruston sand is valued at from \$2 to \$7 an acre.

ORANGEBURG SANDY LOAM.

The surface soil of the Orangeburg sandy loam is about 8 to 12 inches deep, and consists of a gray to light-brown sandy loam. It is underlain by a red, friable sandy clay subsoil, which becomes more clayey with depth. In texture the soil ranges from a fine sandy loam to a coarse sandy loam.

The red sandy clay subsoil throughout the entire type has a granular structure, which renders it absorptive and retentive of moisture.

The humus content of the surface soil is comparatively low. On the slopes much of the surface soil has been removed by erosion, exposing the underlying red clay, while on the lower slopes the sand has accumulated to a depth of 15 or 20 inches. The type as a whole is easily cultivated and a good mellow seed bed can always be obtained without difficulty.

The Orangeburg sandy loam is derived from the weathering of Coastal Plain materials. The type is confined to the eastern part of the county, where it occupies high, narrow ridges and slopes. The surface drainage is naturally good. Erosion is active on the steeper slopes.

Where the topography is not too rough this type is well adapted to trucking. Tomatoes, peanuts, watermelons, cowpeas, soy beans, velvet beans, sweet potatoes, and cantaloupes do well. Fruits, such as peaches, pears, and grapes, give good yields. Cotton and corn do well where properly fertilized.

This soil lacks organic matter and should be improved by growing legumes and occasionally plowing under a green crop. Winter cover crops, such as rye, oats, or vetch, should be used to control erosion. The planting of Bermuda grass or lespedeza, which are good soil binders, should also be practiced for the same purpose.

The forest growth consists of shortleaf pine, chestnut, and scrub oak. The value of this type ranges from \$3 to \$10 an acre.

ORANGEBURG SAND.

The Orangeburg sand to a depth of about 8 inches is a grayish-brown to reddish-brown or dull-red medium sand. This is underlain by a red sand of about the same texture, frequently extending to a depth of 3 to 7 feet. In some places the soil grades at about 28 inches into a red sticky sand or sandy clay, and the nearer this lies to the surface the better the type is for farming. The loose, open structure of the soil makes it very easy to cultivate with the ordinary light-weight implements in present use.

The type comprises only a small total area, being confined to small patches east and southeast of Oxford. The topography is rough and hilly, and the soil erodes badly during heavy rains. The drainage is in most cases excessive, and the crops likely to suffer injury during droughts.

The Orangeburg sand is derived from deep sand beds in the Coastal Plain formations. The main constituent of this type is quartz sand.

The forest growth consists of scrub oak and old-field pine. Only a small part of the type is under cultivation. The type responds quickly to fertilizers and should be used for such truck crops as can be forced to early maturity.

The soil is very much in need of vegetable matter and is of little agricultural value.

SUSQUEHANNA SILT LOAM.

The Susquehanna silt loam is a grayish to grayish-yellow silt loam, with an average depth of 8 inches, underlain by a heavy, plastic, red clay, mottled with drab and gray and extending to a depth of 3 feet. In places the lower part of the 3-foot section is a white or light-colored, heavy plastic clay.

Fragments of ferruginous rock from 6 inches to 2 feet in thickness are encountered in areas of this type, particularly on hill slopes and ledges.

The type is confined to the eastern and southeastern parts of the county. Some of the largest areas occur along the Pontotoc County line and in the vicinity of Tula, Dallas, Lafayette Springs, and east of Denmark.

Probably not more than 20 per cent of the Susquehanna silt loam is in cultivation. The failure to farm more of it is due in a large measure to its heavy nature, which makes tillage somewhat difficult. The cultivated areas seem well adapted to cotton, corn, peaches, soy beans, and cowpeas. Cotton produces from one-half to 1 bale an acre, and corn from 15 to 25 bushels.

The forest growth consists of shortleaf pine, red oak, white oak, gum, and persimmon. Of the smaller plants lespedeza is characteristic. This legume makes a luxuriant growth on almost every part of the type. The litmus-paper test shows a few areas to be acid, due in most cases to poor drainage.

In general the Susquehanna silt loam is not a good agricultural soil, though with the incorporation of vegetable matter in large quantities it can be made a profitable farming type. The physical condition may also be improved by the application of lime in liberal quantities and by deep fall plowing. The rotation of crops should receive greater attention. This type should be devoted to pasturage or used for cotton and corn, cowpeas, vetch, and clover.

The average value of the Susquehanna silt loam ranges from \$3 to \$15 an acre, depending upon its location.

THOMPSON FINE SANDY LOAM.

The Thompson fine sandy loam consists of 4 to 6 inches of brownish-yellow or light-brown to drab fine sandy loam, underlain by a yellowish-brown very fine sandy loam. The subsoil, which is encountered at a depth of 10 inches, is not uniform in texture, containing both fine sand and silt. At 20 to 36 inches a silt loam of uniform structure and texture occurs. This material closely resembles the

subsoil of the Vicksburg silt loam. The soil and subsoil of this type contain large quantities of mica flakes.

The type occupies the first bottoms along small streams and is subject to overflow. It has a small total area in Lafayette County and is comparatively unimportant. Some of the largest bodies occur along Goose Creek and Burney Branch. A few small areas are developed along some of the branches west of Oxford and along the Tallahatchie River northeast of Abbeville.

The Thompson fine sandy loam owes its origin to the wash of Coastal Plain material which has been deposited by streams as alluvial material and exposed through stream erosion. Some of the small areas are in cultivation and fair yields of cotton and corn are secured. The type sells for \$7 to \$12 an acre.

The results of mechanical analyses of samples of the soil and subsoil of this type are given in the following table:

Mechanical analyses of Thompson fine sandy loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
422621.....	Soil.....	0.2	2.8	7.4	39.6	18.0	26.5	5.3
422622.....	Subsoil.....	.0	1.4	3.6	28.2	19.0	39.5	8.9

MEADOW.

The term "Meadow" is used to designate the low-lying, poorly drained areas developed as narrow strips along the numerous small water courses. Meadow includes soils varying in texture from sand to clay, with the sandy soils predominating along the upper branches of the streams, and the silt and clay occurring where the bottom becomes wider. In many places sandy loams, sands, and clays are intermingled, so that a silty stratum may be included in a sandy loam subsoil. The color of the material is prevailingly gray, although this varies with the percentage of organic matter present and the frequency of overflow. Because of the wide variation in texture, as well as in the organic content, any type separation is impracticable. These deposits are alluvial, and occupy first bottoms inundated at frequent intervals, the soil being saturated and in a soggy condition during the greater part of the year.

Meadow is practically unused. It supports an undergrowth consisting of scrubby trees and brush. It has but little agricultural value in its present condition.

Much of the Meadow throughout the county could be reclaimed by straightening and clearing the stream channels and constructing lateral ditches from the streams to the near-by slopes. Lime should

be applied on areas of heavy soils, such as the silt loams and clay loams.

Cotton, corn, grass, and forage crops can be profitably grown under favorable conditions of drainage.

When cleared Meadow makes excellent summer pasture for cattle, as it usually supports a rank growth of wild grasses.

SUMMARY.

Lafayette County is situated in the north-central part of Mississippi, and has an area of 664 square miles, or 424,960 acres. The average elevation is about 550 feet.

The county is divided into two main drainage divisions. The country north of Oxford drains into the Tallahatchie River, the drainage of that south of Oxford is through the Yocona River. The Tallahatchie and Yocona bottoms are fertile and range from 1 to 2½ miles in width.

The topography is very rough, the surface being badly eroded and dissected by small streams and gullies. The county includes a series of ridges, with narrow, flat, or rounded crests and steep slopes.

The mean annual temperature is about 61° F., and the mean annual precipitation about 48 inches. The rainfall is well distributed throughout the year. The climate is healthful, especially in the uplands. The winters are short and mild, while the summers are warm and long.

The University of Mississippi is located at Oxford, the county seat. This is a modern town, with a population of 2,014.

The county is crossed from north to south by the Illinois Central Railroad, which affords good transportation facilities, connecting with Jackson and Memphis.

Agriculture is the principal industry of the county. Cotton, corn, sweet and Irish potatoes, fruits, sorghum, and vegetables are the principal crops. About 15,000 bales of cotton are produced annually.

Lafayette County includes a wide variety of soils, 11 different types being mapped. The Memphis silt loam is the most extensive type in the area. It is derived from loess and is an excellent soil for cotton, corn, truck, and fruit.

The Memphis silt loam, smooth phase, is also a loessial soil. It has an almost level to slightly undulating topography, and is one of the best truck soils in the county.

The Lintonia silt loam is developed as a second-terrace soil bordering the bottoms of some of the larger streams. It is a good agricultural soil, producing from one-half bale to 1½ bales of cotton to the acre.

The Vicksburg silt loam is a bottom-land soil subject to overflow. It is formed from materials washed from the Memphis silt loam. Cotton, corn, and the legumes do well on this type.

The Ruston series is represented by three distinct types, the Ruston sand, Ruston sandy loam, and Ruston fine sandy loam. These are light sandy soils and are well adapted to farming.

The Orangeburg series is represented by two types, the Orangeburg sand and Orangeburg sandy loam. Both are good farming soils, and well adapted to the production of peaches.

The Susquehanna silt loam is encountered in the eastern part of the county. It is difficult to cultivate, but produces good crops of cotton and corn under favorable conditions.

The Thompson fine sandy loam occurs in the bottoms and is subject to overflow. This is an inextensive type and comparatively unimportant.

Meadow is a bottom-land soil, subject to frequent overflows. It is of little agricultural value, but supports a dense growth of vegetation, including water-loving grasses, which afford some grazing. If reclaimed the Meadow areas make good farming land.



[PUBLIC RESOLUTION—No. 9.]

JOINT RESOLUTION Amending public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, "providing for the printing annually of the report on field operations of the Division of Soils, Department of Agriculture."

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, be amended by striking out all after the resolving clause and inserting in lieu thereof the following:

That there shall be printed ten thousand five hundred copies of the report on field operations of the Division of Soils, Department of Agriculture, of which one thousand five hundred copies shall be for the use of the Senate, three thousand copies for the use of the House of Representatives, and six thousand copies for the use of the Department of Agriculture: *Provided*, That in addition to the number of copies above provided for there shall be printed, as soon as the manuscript can be prepared, with the necessary maps and illustrations to accompany it, a report on each area surveyed in the form of advance sheets, bound in paper covers, of which five hundred copies shall be for the use of each Senator from the State, two thousand copies for the use of each Representative for the Congressional district or districts in which the survey is made, and one thousand copies for the use of the Department of Agriculture.

Approved, March 14, 1904.

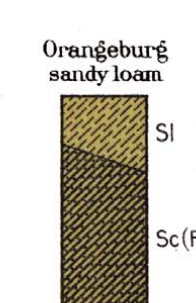
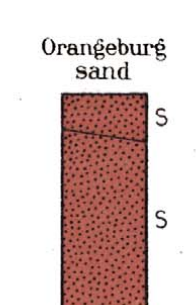
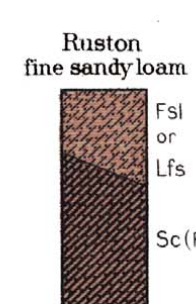
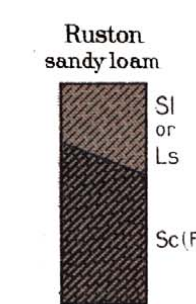
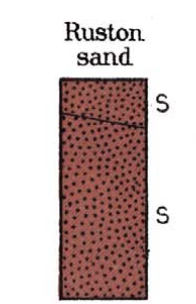
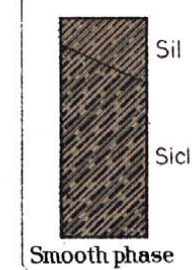
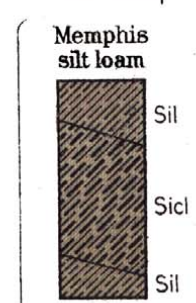
[On July 1, 1901, the Division of Soils was reorganized as the Bureau of Soils.]

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SOIL
PROFILE
(3 feet deep)



LEGEND

- Si Silt loam
- Sil Silty clay loam
- S Sand
- Sl Sandy loam
- Ls Loamy sand
- Sc Sandy clay
- Fs Fine sandy loam
- Lfs Loamy fine sand
- Sc(F) Sandy clay (friable)
- Hc Heavy clay
- Vfs Very fine sandy loam

LEGEND

- Memphis silt loam (Ms)
- Smooth phase
- Ruston sand (Rs)
- Ruston sandy loam (Rl)
- Ruston fine sandy loam (Rf)
- Orangeburg sand (Os)
- Orangeburg sandy loam (Ol)
- Lintonia silt loam (Ls)
- Vicksburg silt loam (Vs)
- Susequehanna silt loam (Ss)
- Thompson fine sandy loam (Tf)
- Meadow (M)

